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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,417	01/07/2002	Ernest A. Carroll		4695

7590 11/19/2003
Ernest A. Carroll
12913 Alton Square, No. 114
Herndon, VA 20170

EXAMINER

HERNANDEZ, OLGA

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,417

Applicant(s)

CARROLL, ERNEST A.

Examiner

Olga Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 12-14, 17, 18, 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendrickson et al (6,529,615) in view of Holmes, Jr. (4,172,632).

As per claims 1 and 2, Hendrickson teaches:

- an aircraft having image acquisition apparatus carried thereaboard (column 11, lines 25-28);
- surveying the agricultural field by acquiring at least one image of the agricultural field from the image acquisition apparatus carried aboard the aircraft (column 4, lines 8-12);
- analyzing the at least one image obtained in the step of surveying the agricultural field to determine at least one local condition of the agricultural field and at least one requirement of the agricultural field relative to an agricultural operation (column 4, lines 13-34); and

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- conducting the agricultural operation with respect to the agricultural field in a manner corresponding to the at least one requirement of the agricultural field as determined in the step of analyzing the at least one image (column 4, lines 35-38).

Hendrickson does not teach the self-powered miniature aircraft weighing less than fifty-five pounds and the image acquisition apparatus comprising at least one of visible light camera, thermal image acquisition apparatus, synthetic aperture radar, and laser radar carried thereaboard. However, Holmes teaches the use of a miniature aircraft (column 53, lines 33-35). Therefore, it would have been obvious to one of ordinary skill in the art to the use of another means to perform the same functions as claimed by the applicant. It is just routine in the art.

As per claim 17, Hendrickson teaches the use of GPS (figure 9).

As per claims 3 and 5, it would have been obvious to one of ordinary skill in the art that most of the aircraft today can gain altitude under its own power.

As per claim 4, it would have been obvious to one of ordinary skill in the art to launch the aircraft from the ground.

As per claims 6, 7, 12 and 14, it would have been obvious to one of ordinary skill to fly the entire or part of the agricultural field being surveyed in one or more flights, because it is the operator's choice.

As per claim 13, Hendrickson teaches the use of at least one aircraft (column 11, lines 25-28). However, it would have been obvious to one of ordinary skill in the art to add another aircraft in order to reduce the working time.

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As per claim 18, it is old and well known to use environment sensors in the aircraft in order to appropriately control the aircraft and avoiding accidents.

As per claim 22-27, it would have been obvious to one of ordinary skill in the art to substitute any means for another means that perform the same function in order to enhance the quality of the view/data.

3. Claims 8-11, 15, 16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendrickson et al (6,529,615) in view of Abel et al (5,467,271).

As per claims 8 and 15, Hendrickson does not teach the automated flight control apparatus and a processor to control the automated flight control apparatus to achieve a predetermined flight path. However, Abel teaches it in column 4, lines 15-23. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to optimize productivity of the farming field.

As per claims 9, 10 and 16, it is old and well known in the art to use radio frequency to communicate with a GPS.

As per claim 11, it is old and well known the use of the environmental data acquired by the system in order to control the aircraft and avoid accidents.

As per claims 19-21, Hendrickson does not specify the area to be flown. However, this is the operator's choice.

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Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Hernandez whose telephone number is (703) 305-0918. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

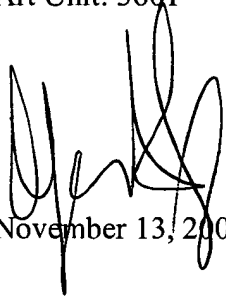
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William A. Cuchlinski can be reached on (703) 308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

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November 13, 2003

Olga Hernandez
Examiner
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WILLIAM A. CUCHLINSKI, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600